“This project was about supporting farmers in bringing fresh food to people who would otherwise not have access and, at the same time, maintaining a financial bottom line that supports our families. We were very excited to put our model into print so that other farmers can replicate this exciting development that makes food a right and not a privilege.”

Leah Penniman
Soul Fire Farm, Grafton NY
Farmer Grant Recipient:
“Economic viability for the farmer, fresh food for low-income families: A manual” (FNE17-879)
About Us

The Northeast Sustainable Agriculture Research and Education (SARE) Program offers competitive grants to farmers, educators, service providers, researchers and others to address key issues affecting the sustainability of agriculture throughout our region.

The Northeast region includes Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia, and Washington, D.C.

We currently offer the following grant programs:
- Farmer
- Partnership
- Graduate Student
- Research and Education
- Research for Novel Approaches
- Professional Development Program
- State Programs

Northeast SARE is one of four regional SARE programs funded by the USDA National Institute of Food and Agriculture.

Northeast SARE's outcome statement:

Agriculture in the Northeast will be diversified and profitable, providing healthful products to its customers; it will be conducted by farmers who manage resources wisely, are satisfied with their lifestyles, and have a positive influence on their communities and the environment.

On cover: Sprouted barley getting prepared for malting. Right: Strawberry cultivars, courtesy of Anna DeVitto, University of New Hampshire. All other photos by Northeast SARE staff unless otherwise noted.
The wealth of Northeast SARE

It’s not easy to pick projects to highlight in Northeast SARE’s Annual Report. We want to reflect the breadth of our project portfolio, but that’s simply not possible when faced with a such a cornucopia of topics that our grantees are exploring.

Our projects address all types of farm products, including dairy, fish, grains, hops, tree fruit, vegetables and everything in between. They also engage many types of farming platforms, from small to large, urban and rural, organic and conventional, mostly land-based but sometimes floating in the ocean. Further, our projects are led by a variety of talented people: farmers, educators, students and scientists. In short, sustainable agriculture is a really big tent and our program reflects that.

We rely on the wisdom of our Administrative Council and Technical Committee to consider the pool of possibilities that come to us in proposals each year, and to select the very best ideas and approaches for improving the economic, environmental and social well-being of agriculture in the Northeast.

The vast majority of funded projects yield information in support of that goal, the evidence for which can be found in the final reports submitted by our grantees. Our challenge for this publication is to wade through the wealth of information generated by projects completed in the past year, and share just a sampling to describe our embarrassment of riches. As my grandmother used to say, “Everyone should have such problems!”
“This project would not have succeeded without the funds from the SARE grant. When I submitted the grant proposal, it was a crazy idea that many did not think would even work...These funds gave me the opportunity to try my crazy idea and, as a result, a fascinating and new research direction was created for me.”

Rafael Valentin
Rutgers University
Graduate Student Grant Recipient:
“Development of a high-resolution surveillance protocol using eDNA for detection of brown marmorated stink bugs” (GNE15-112)
As we start another year of grant-making, it seems fitting to send a hearty acknowledgement to two important committees at Northeast SARE: the Technical Committee (TC) and Administrative Council (AC). These leadership groups make our grant programs go ‘round; put simply, Northeast SARE would not be the unique grant-making program it is without them. We greatly appreciate the dedication of these individuals—who represent the diversity of farming types, academic disciplines and geographic locations that make up our agricultural community—to keep the program innovative and responsive to the needs of farmers throughout the Northeast.

The Technical Committee is a group of farmers, Extension educators, researchers, non-profit and government staff, and other professionals who work with farmers. Each year, TC members serve on grant review panels to contribute their experience and expertise to review and rank proposals for all of our grant programs. These recommendations are then provided to the Administrative Council for final award selections.

The Administrative Council is Northeast SARE’s leadership committee. AC members also review and evaluate grant proposals and, importantly, help guide program and policy development as well. The 2018 list of Administration Council members follow. Thank you TC and AC members!

2018 Northeast SARE Administration Council
- Brent Beidler, Beidler Family Farm, Randolph Center, VT
- Kristy Borrelli, Pennsylvania State University, University Park, PA (Professional Development Program Liaison)
- Richard Brzozowski, University of Maine Cooperative Extension, Orono, ME
- Zachary Evans, MidAtlantic Farm Credit, Salisbury, MD
- Wesley Dean/Rob Hedberg/Kim Kroll, Sustainable Agriculture Research and Education Program, Washington, D.C.
Northeast SARE leadership committees and staff strive to better understand the diversity of agriculture and needs of farmers throughout our region through annual farm visits. In 2018, the group (including TC, AC, state coordinators and staff pictured below) learned more about farming on and in Maine’s seacoast.

- Sarah Goslee, USDA-ARS, University Park, PA
- Clare Hinrichs, Pennsylvania State University, University Park, PA
- Dean Hively, USGS Eastern Geographic Science Center, Beltsville, MD
- Robert Koethe/Andrea Szylvian, EPA New England, Region 1, Boston, MA
- Nathan L'Etoile, Four Star Farms, Northfield, MA
- Rose Ogutu, Delaware State University, Dover, DE
- Amy Ouellette, University of New Hampshire Cooperative Extension, Durham, NH (Chair)
- Talmage Petty, Hollywood Oyster Company, Hollywood, MD
- Mark Powell, Maryland Department of Agriculture, Annapolis, MD
- Kristen Saacke Blunk, Headwaters LLC, Richmond, VA
- Hannah Smith-Brubaker, Village Acres Farm, Mifflintown, PA
- Andrew Smyre, Anchor Ingredients Company, Mohrsville, PA
- Elizabeth Spellman, Agrarian Trust, New Castle, VA
- Mikel Williams Hawkins, USDA-NRCS, Annapolis, MD
- Thomas Vogelmann, University of Vermont, Burlington, VT
“The SARE grant was very helpful in bringing new native shrub products to nursery growers in the Northeast.”

**Jessica Lubell**
University of Connecticut
Research and Education Grant Recipient: “Developing adaptable native shrubs for the green industry” (LNE13-324)
During the 2018 grant cycle, Northeast SARE awarded $3,597,330 in competitive grants to conduct 90 projects throughout the Northeast and mid-Atlantic. An additional $643,857 was awarded to 15 state SARE programs housed at each land grant university across the region to conduct professional development and SARE outreach activities. A full listing of 2018 funded projects appear on pages 18 to 27. While these projects are busy conducting research, generating new information and conducting farmer outreach, Northeast SARE staff have been monitoring projects to their end, tracking project successes and closing the loop on our grant investments.

Seventy-six projects were completed between October 2017 and October 2018, totaling $2,302,068. They included 7 Research and Education projects, 4 Professional Development projects, 22 Farmer grants, 22 Partnership grants, and 21 Graduate Student projects. These projects addressed a wide span of topics including developing maple tubing sanitation practices, podcasts on soil health, farmer equipment sharing strategies, and pathogen-based protocols to combat clinical mastitis in dairy cattle. A sampling of projects completed in 2018 appear over the next few pages. In total, these projects trained 16,692 farmers and 3,325 agricultural service providers. As a result, 2,466 farmers made on-farm changes as a result of what they learned.
Maine training focuses on interpersonal relationships

Providing farmers with expert advice on production and farm management topics is the focus of much of the work conducted by Extension educators, nonprofit staff and other agricultural service providers. But what happens when the conversation with farmers veers beyond soil health, agronomy and animal husbandry to questions around communication, decision-making, goal-setting and time management?

To help agricultural service providers better navigate these topics with their farmer clients, University of Maine Cooperative Extension’s human development specialist Leslie Forstadt focused her Northeast SARE Professional Development Program grant on interpersonal relationship skill-building.

To start the project, Leslie and her team conducted farmer focus groups to gain a better understanding of interpersonal needs that farmers have at different stages of their farms’ development.

Over the course of the project, 53 providers received training. Each training covered aspects of farmer typology (from novice to expert), built provider’s skills to act as “guides” or active listeners, and practiced skill-building related to communication, decision-making, goal-setting and time management. About half of the participants reported that they used the tools developed by the project in one-on-one consultations with more than 87 farmers.

As a result of the project, one participant said, “The active and effective listening exercises in the training were critical in helping me hone my interpersonal communications methods. As a service provider I am now much more aware of how my listening/feedback is interpreted by our customers.”

Another said, “Having the broader first-hand information of what farmers reported they need and/or how they see what makes a farmer/farm successful has made me a better practitioner... And, having knowledge about the development cycles and learning stages has been huge in increasing my depth of knowledge and reminding me that 'not all beginning farmers' are the same.”
PARTNERSHIP PROJECT HIGHLIGHT: ONE16-269

Guild by association: Partnership grant organizes Maryland cheesemakers

A

lthough consumer demand for local Maryland artisanal and farmstead cheeses is high, state regulatory hurdles have created significant barriers for this emerging industry. Working with Ginger Myers, agricultural marketing specialist with the University of Maryland Extension, a committed group of farmstead cheese producers and agriculture support specialists teamed up to form the Maryland Cheesemakers' Guild to provide a common voice on regulatory issues as well as provide educational and marketing opportunities to help support the industry’s growth.

With support from a Northeast SARE Partnership grant, the group drew on the experiences from 13 cheesemaker guilds scattered throughout the U.S., keying in on their organizational structures, member activities, and educational resources provided. The team also drew on Maryland’s Brewer and Distiller guilds, focusing on ways these guilds have navigated regulatory issues within the state. The team then designed the membership structure of the guild and a business plan for its operation.

The Guild now has a formal structure, Board of Directors and a statewide membership. The team built marketing materials aimed at both potential members and consumers, and it expanded the Guild website at: www.mdcheese.org. The team also collected data on key issues facing producers and worked with members, partner guilds and affinity groups to promote the Guild and local cheeses through festivals, events and a Maryland cheese contest.

While regulatory hurdles are still being addressed, the Maryland Cheesemakers’ Guild now has the organizational structure and leadership in place for addressing production, regulation, and marketing challenges, and have a plan for raising public awareness of locally produced cheese products.
High tech avian control takes flight at Elliot Farm

For vegetable and grain farmers across the region, pest management means tackling weeds, insects, diseases...and birds. Management of flocking birds like red-winged blackbirds, starlings, grackles and crows can be particularly challenging; most are protected by the Migratory Bird Treaty Act and common management techniques like pyrotechnics and distress calls vary in effectiveness, sometimes distressing concerned farm neighbors more than the birds! Besides, birds are farmers’ friends during the nesting season when they feed primarily on insects.

It’s during the harvest season in late summer through winter when birds shift their diets to grains and seeds. That’s not good news for farmers like Ken Elliot of Elliot Farm in Lakeville, Massachusetts. Ken farms with his dad and sister on their family farm that produces sweet corn as a primary crop.

Despite efforts to keep birds at bay using balloons, distress calls, bird repellent, reflecting tape and netting, during the 2016 season, Elliot Farm lost 80% of its sweet corn crop to bird damage, estimated at $18,000 in lost product.

So Ken was excited to join a laser scarecrow feasibility study, conducted by University of Rhode Island’s Rebecca Brown under a Northeast SARE Partnership grant.

The project tested the efficacy of automated laser “scarecrows” that use moving green laser beams to frighten birds. Ken and 2 other
farmers participated in the project where the team tested the lasers on 6 sweet corn fields in peri-urban locations. Although the scarecrows were found to be highly effective at repelling birds from farm fields, the laser prototypes used during the study broke multiple times during the season, affecting their ultimate efficacy on the commercial farms.

However, based on his experiences with Brown’s project and the potential of laser scarecrows for bird damage control, Ken was inspired to seek his own Northeast SARE grant. He received a 2018 Farmer Grant to design and manufacture a laser scarecrow prototype with the goal of keeping the cost per unit under $500 as an affordable pest management strategy for farms their size.

Ken worked with engineers at Wentworth Institute of Technology on designing the prototype as well as researching relevant laser technology regulations to ensure the unit was in legal compliance.

From July to October, they tested 9 units on 40 acres of sweet corn on the farm.

Elliot Farm reported a reduction in bird damage, down to 20% at the height of bird season. They found if the lasers were used in conjunction with bird distress calls, the damage was further reduced to just 8%.

Ken noted that it was particularly important to install the laser scarecrows (and other bird repellent tools) prior to corn ripening to deter the birds from ever entering the field.

Elliot Farm compiled their results and developed a how-to build your own laser manual to share with other farmers. The manual—that includes parts lists; step-by-step instructions on the electronics components, laser alignment and termination, and overall assemblage, as well as laser safety and legal considerations--is available at: deannaelliot.wixsite.com/laserscarecrow. The plans may be freely used to make laser scarecrows for personal use.

Ken and his family concluded that with this technology, small-scale farms can increase the sustainability and viability of their agricultural enterprises through this affordable bird repellent tool.

They say that Elliot Farm will now be using this technology to mitigate bird damage on their sweet corn acreage.
Throughout the Northeast, cover crops are now widely planted to protect and build soils. But, researchers and farmers alike are interested in discovering additional benefits that cover crops can provide, including growing them as livestock forages.

Cornell University agronomist Quirine Ketterings conducted her Northeast SARE Research and Education project to better understand the incorporation of winter cereal cover crops—triticale, winter rye and wheat—into silage corn rotations. This double crop system enables farmers to provide both corn and cover crops as livestock feed. Because growing cover crops as dairy forages means they need to be managed like cash crops, Quirine and her team were particularly interested in learning the nitrogen (N) needs of these covers during green-up. Nitrogen management is important to not only gain good yields but is also a key factor in achieving optimal dietary protein as a dairy feed.

The project team installed 19 field trials on farms across New York to determine optimum N rates of winter cereal cover crops when double cropped with silage corn. Further, Quirine expanded the team to include 47 farmers and 21 farm advisors (extension, government agencies, private sector consultants) allowing the project to collect similar on-farm data on an additional 44 trial sites throughout the state.

Research results showed that site characteristics play a role in N needs for winter cereals grown for forage. Therefore, fields need to be evaluated on an individual basis to determine whether or not N should be applied in the spring.
Dovetailing with Quirine Kettering's Research and Education project, Cornell University student Sarah Lyons recently completed her Northeast SARE Graduate Student grant (GNE15-108) that looked at livestock feed quality characteristics of winter cereal cover crops grown at different N rates. She found that N rates affected yield and crude protein levels in the feed, while fiber and digestibility rates were largely unaffected. Her study revealed that cover crop forage quality does change when ensiled, highlighting the importance of analyzing stored feeds. Sarah also looked at feed substitution—replacing traditional feedstocks like corn silage with these winter cereals—and found that 100% substitution affected metabolizable energy, suggesting the need for balancing livestock feed rations when using these crops. Her research showed that winter cereal cover crops are viable livestock feeds when properly managed, providing dairy farmers with valuable extra sources of farm-raised forages, while protecting soil quality.

From the collection and analysis of yields, soil and forage quality, cover crop planting date, and site characteristics (like tile drainage, soil types and fertility history), the team developed a N recommendation system for growing winter cereal covers for forage. They also created an Excel calculator to estimate nutrient levels of winter cereal cover crops.

In addition, the team conducted an economic analysis of growing cover crops in a double crop system. They found that winter cereals can be grown profitably in corn rotations even when fertilizers are needed or silage yields are slightly reduced. If winter cereal covers are used for forage, they should be managed as a crop with attention to planting dates, fertility management, and harvest quality.

As a result of the project, eleven farmers made on-farm changes to expand their use of cover crops, use double cropping and/or change N application rates to the winter cereals at green-up. Farmer successes are highlighted in case studies at: nmsp.cals.cornell.edu/NYOnFarmResearchPartnership/DoubleCrops.html.

One farmer collaborator said, “The on-farm research really helps to see what can work. Double cropping with winter triticale is great for my feed program and fits in beautifully with short rotations that keep soil covered to help my farm stay productive into the future.”

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**Graduate student studies livestock feed value of cover crops**

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RI student studies production and marketing potential of amaranth

Amaranth is a traditional leaf vegetable in over 50 countries, yet little research exists on growing this crop in temperate climates like the Northeast U.S. University of Rhode Island student Sarah Schweig saw the potential that this crop might hold for farmers looking to diversity their farms in our densely populated, ethnically diverse region. Therefore, the goal of her Northeast SARE Graduate Student grant was two-fold: develop production protocols for growing vegetable amaranth under Northeast conditions and study consumer demand for this crop with an eye to varieties of interest to Rhode Island farmers’ market shoppers.

From previous evaluations of 10 vegetable amaranth varieties grown under various conditions, Sarah selected 4 varieties—Miriah, Green Pointed Leaf, Red Callaloo and White Leaf—for both her production and market studies. Her variety trials evaluated yields by planting dates under low tunnels, black plastic mulch and bare soil conditions. Sarah presented her results and tips for growing amaranth in a video at: youtu.be/SmDCXC1ToBI.

To assess the potential market demand for vegetable amaranth, Sarah conducted a consumer survey at a local farmers’ market where she asked shoppers about their familiarity with amaranth, variety preferences, overall frequency of purchasing fresh vegetables at the market, and individual demographic information. She found that 75% of respondents were familiar with at least one amaranth variety and 69% preferred a variety with which they were already familiar. Although the survey results cannot be generalized, they suggest the importance of identifying and understanding target markets for amaranth.

Sarah reflected on her experience conducting the project, “The goal of assessing production
National SARE conference reflects on past 30 years and looks forward to the future

More than 900 farmers, educators and other sustainable agriculture enthusiasts--including over 100 folks from the Northeast--participated in the 2018 “Our Farms, Our Future” conference, a national gathering held in St. Louis to celebrate the 30th anniversaries of both SARE and NCAT/ATTRA sustainable agriculture programs.

The three-day event included more than 35 breakout sessions, bringing close to 110 speakers together to share their diverse ideas about the future of sustainable agriculture. The conference also featured poster sessions that highlighted 46 Northeast SARE-funded projects.

Of note, conference organizers recorded "story-corps" style conversations among a diversity of sustainable agriculture community members across the country. These discussions about how we got here and where we're headed are being released monthly through a podcast series.

All conference materials--including posters, podcasts and videos of workshop sessions--are online and available at: ofof.sare.org.
During the 2018 grant cycle, Northeast SARE awarded $3,597,330 in competitive grants to conduct 90 projects throughout the Northeast. An additional $643,857 was awarded to 15 State Programs housed at each land grant university across the region to conduct professional development and SARE outreach. See the following 2018 awards, listed by state of project coordinators (note that many projects involve multi-state programming). Find more information about these and other SARE-funded projects by searching project name, number or coordinator on SARE’s national database at: projects.sare.org/search-projects.

2018 awards on the map

**Connecticut**

**RESEARCH AND EDUCATION GRANT: LNE18-363**

*Improved Nitrogen Management for Corn using Aerial Images, Adapt-N, Chemical and Biological Soil Tests, and Cover Crops*

Karl Guillard, University of Connecticut, Storrs CT

$241,570

**STATE PROGRAM: NECT17-001**

*Nutrition’s Role in Sustainable Livestock Production Practices*

Joe Bonelli, University of Connecticut, Storrs CT

Program Associates: Rachel Bespuda and Jean King

$75,110

**Delaware**

**PARTNERSHIP GRANT: ONE18-317**

*Characterization of Gastrointestinal Nematode Anthelmintic Resistance on Small Ruminant Farms in Delaware*

Kwame Matthews, Delaware State University, Dover DE

$14,974

**STATE PROGRAM: NEDE17-001**

*Beginning Farmer Workshops*

Dan Severson, University of Delaware, Newark, DE

$16,330
Massachusetts

**STATE PROGRAM: NEDSU17-001**

Cover Crop and Soil Health Training for Agriculture Service Providers in Delaware and the Eastern Shore of Maryland

John Clendaniel, Delaware State University, Dover, DE

Program Associate: Jason Challandes

$83,332

**FARMER GRANT: FNE18-098**

Determining Proper Feeder Space Requirements for Pasture-Raised Laying Hens and Broilers

Peter Lowy, Codman Community Farms, Lincoln MA

$9,566

**FARMER GRANT: FNE18-912**

Effectiveness of Mixed Perennial Groundcovers in Establishing Hazelnut Hedgerow Systems in the Northeast

Sara Tower, Nutwood Farm, Cummington MA

$15,000

**FARMER GRANT: FNE18-913**

System Modifications and Varieties for Extending the Organic Strawberry Plasticulture Ripening Season in MA

Ryan Voiland, Red Fire Farm, Montague MA

$12,303

**FARMER GRANT: FNE18-902**

Massachusetts Employee Manual Template: A Tool for Improving Employee Management on Farms

Margaret Christie, Community Involved in Sustaining Agriculture, Inc. (CISA), South Deerfield MA

$15,000

Maryland

**FARMER GRANT: FNE18-900**

Use of Rate-of-Gain and Dry Lot to Maintain Parasite Anthelmintic Susceptibility in Bluefaced Leicester Maryland Lambs

Andrew Keller, Vista View Farms, Damascus MD

$13,658

**GRADUATE STUDENT GRANT: GNE18-167**

Evaluation of Biochar as an Additive for Biogas Desulfurization in Dairy Manure Digesters

Abhinav Choudhury, University of Maryland, College Park MD

Advisor: Stephanie Lansing

$14,950
INNOVATIONS

Maine

FARMER GRANT: FNE18-897
Tree Leaf Fodder for Livestock: Transitioning Farm Woodlots to ‘Air Meadow’ for Climate Resilience
Shana Hanson, 3 Streams Farm, Belfast ME
$15,000

FARMER GRANT: FNE18-901
Littleneck Clam and American Oyster Polyculture: Economic Viability and Nursery Technique
Jordan Kramer, Winnegance Oyster Farm, Portland ME
$12,273

FARMER GRANT: FNE18-905
High Density Hybrid Plums: Innovation and Efficient Fruit Production for the Northeast
John O’Meara, O’Meara Family Farm, New Sweden ME
$7,508

GRADUATE STUDENT GRANT:
GNE18-177
Movement of Spiders from Drainage Ditches to Agricultural Fields to Enhance Conservation Biocontrol
Dylan Kutz, University of Maryland, College Park MD
Advisor: William Lamp
$13,684

GRADUATE STUDENT GRANT:
GNE18-172
Improving Productivity of Casco Bay Kelp Farms Using Spatiotemporal Analysis of Coastal Nutrient Data
Gretchen Grebe, University of Maine, Scarborough ME
Advisor: Damian Brady
$14,754

GRADUATE STUDENT GRANT:
GNE18-178
Understanding Spotted Wing Drosophila’s Role as a Vector for Fruit Rot Fungi in Fall Red Raspberries
Margaret Lewis, University of Maryland, College Park MD
Advisor: Kelly Hamby
$14,994

GRADUATE STUDENT GRANT:
GNE18-185
Getting Legume Cover Crops to Work in Mid-Atlantic Field Crop Rotations
Cara Peterson, University of Maryland, College Park MD
Advisor: Katherine Tully
$14,811

GRADUATE STUDENT GRANT:
GNE18-187
Evaluating the Effect of Potato Leafhopper Feeding on Biological Nitrogen Fixation in Alfalfa
Morgan Thompson, University of Maryland, College Park, College Park MD
Advisor: William Lamp
$8,804

RESEARCH AND EDUCATION GRANT: LNE18-366
Optimization of Starter Nitrogen Fertilizer Application for Corn Planted into a Cereal Rye Cover Crop
Katherine Tully, University of Maryland, College Park MD
$199,790

STATE PROGRAM: NEUMES17-001
Demonstration of Successful Apple Orchard Establishment on the Eastern Shore of Maryland
FNU Naveen Kumar, University of Maryland Eastern Shore, Princess Anne MD
$16,666

STATE PROGRAM: NEUMD17-001
Building Soil Health in Maryland through Agricultural Service Provider Education
Nevin Dawson, University of Maryland, Denton MD
$83,850

PARTNERSHIP GRANT: ONE18-313
Relationship Marketing in the Digital Age: Helping Farmers Grow Their Businesses Through Online Marketing
Juliet Glass, Maryland Farmers Market Association, Annapolis MD
$14,495

PARTNERSHIP GRANT: ONE18-315
Evaluation of Hops Production in Maryland as a Sustainable Agricultural Enterprise
Andrew Kness, University of Maryland, Forest Hill MD
$12,214

PROFESSIONAL DEVELOPMENT PROGRAM GRANT: ENE18-151
Conservation Leasing Guide Education Series
Sarah Everhart, University of Maryland Francis K. Carey School of Law, St. Michaels MD
$159,380

RESEARCH AND EDUCATION GRANT: LNE18-366
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Gretchen Grebe, University of Maine, Scarborough ME
Advisor: Damian Brady
$14,754
“Our SARE project not only built the knowledge and confidence of our participants to better work with farmers on pasture and hayland management, it also built stronger networks among these professionals for their future collaboration and allowed them to become better aware of Northeast SARE’s program opportunities.”

Sid Bosworth
University of Vermont Extension
Professional Development Program
Grant Recipient:
"Professional development project in weed and forage identification and management" (ENE14-130)
New Hampshire

**GRADUATE STUDENT GRANT: GNE18-184**

**Innovative Resources for Small Ruminant Health**

Sarah Paluso, University of Maine, Milford ME  
Advisor: Anne Lichtenwalner  
$15,000

**PARTNERSHIP GRANT: ONE18-322**

**More Maine Meat Chain of Custody Project**

Tanya Swain, Maine Sustainable Agriculture Society, Farmington ME  
$14,998

**STATE PROGRAM: NEME17-001**

**Strengthening Knowledge, Skills and Networks for Soil Security in Maine**

Ellen Mallory, University of Maine, Orono ME  
Program Associate: Tom Molloy  
$45,054

**New Hampshire**

**FARMER GRANT: FNE18-914**

**Assessing No-Till Permanent Raised Beds for Mixed Vegetable Production on Marginal Soils**

Jennifer Wilhelm, Fat Peach Farm, Madbury NH  
$14,965

**GRADUATE STUDENT GRANT: GNE18-169**

**Expanding Northeast Strawberry Production in Controlled Environment Agriculture with Naturally-Derived Nutrient Source**

Anna DeVitto, University of New Hampshire, Durham NH  
Advisor: Todd Guerdat  
$14,760

**RESEARCH FOR NOVEL APPROACHES: LNE18-371**

**Expanding No-till Organic Vegetable Production through the Combination of High-residue Cover Crops and Solarizing Tarps**

Richard Smith, University of New Hampshire, Durham NH  
$126,668

**GRADUATE STUDENT GRANT: GNE18-182**

**Harvesting Sap and Producing Syrup From Trees Other Than Maples, Birches, and Walnuts**

David Moore, University of New Hampshire, Durham NH  
Advisor: Heidi Asbjornsen  
$14,848

**FARMER GRANT: FNE18-888**

**Optimization and Demonstration of Field Nursery Practices for Oyster Seed Cultivation in the Delaware Bay, New Jersey**

Lisa Calvo, Sweet Amalia Oyster Farm, Newfield NJ  
$14,240

**FARMER GRANT: FNE18-892**

**Analyzing the Profitability of Seasonal Wreath Production**

Monica Drazba, Chickadee Creek Farm, Pennington NJ  
$5,223

**GRADUATE STUDENT GRANT: GNE18-181**

**Evaluating Native American Hazelnuts for Use as Cold Hardy Pollenizers in European Hazelnut Orchards**

Alex Mayberry, Rutgers University, New Brunswick NJ  
Advisor: Thomas Molnar  
$10,048

**New Jersey**

**FARMER GRANT: FNE18-885**

**Comparison of Five Methods of Crop Thinning in Pinot Noir and their Effects on Fruit Composition and Wine Quality**

Michael Beneduce, Beneduce Vineyards, Pittstown NJ  
$14,871

**FARMER GRANT: FNE18-888**

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Lisa Calvo, Sweet Amalia Oyster Farm, Newfield NJ  
$14,240

**FARMER GRANT: FNE18-892**

**Analyzing the Profitability of Seasonal Wreath Production**

Monica Drazba, Chickadee Creek Farm, Pennington NJ  
$5,223

**GRADUATE STUDENT GRANT: GNE18-181**

**Evaluating Native American Hazelnuts for Use as Cold Hardy Pollenizers in European Hazelnut Orchards**

Alex Mayberry, Rutgers University, New Brunswick NJ  
Advisor: Thomas Molnar  
$10,048
New York

**FARMER GRANT: FNE18-887**

Innovative and Affordable Methods of Managing Weeds in Strawberry Production
Megan Burley, Burley Berries and Blooms, Warsaw NY
$10,399

**FARMER GRANT: FNE18-898**

Cost-Benefit Analysis of Pastured Pig Weight Gains With and Without Added Protein Supplements
Angela DeVivo, The Piggery Inc., Trumansburg NY
$14,852

**FARMER GRANT: FNE18-902**

Creating and Capturing Synergies: Developing a Network of CEA Microgreen Growers in Western NY
Matthew Raiff, Fulmer Valley Farm, Andover NY
$13,802

**FARMER GRANT: FNE18-909**

Improving Compacted Soils with Stropharia Mushrooms
Alice Gallagher, Brady Farm, Syracuse NY
$13,081

**FARMER GRANT: FNE18-913**

Developing a Device to Capture the Untapped Potential of Fly Larvae in Dairy Cow Manure Pits as Ingredients for Fish Feeds
Jeremy Sherman, Jerry Dell Farm, Dryden NY
$6,173

**FARMER GRANT: FNE18-915**

Verjuice in the Hudson Valley
Ali Yaghoubi, Alistone vineyard, Hopewell NY
$9,335

**FARMER GRANT: FNE18-899**

Hill Wicking in Fields for Natural Irrigation and Drainage
Louis Lego, Elderberry Pond Farm, Auburn NY
$9,769

**FARMER GRANT: FNE18-894**

Innovation in Community Supported Agriculture through Collaboration with Specialty Producers
Peter Johnson, Rusty Bucket Mushrooms, Buffalo NY
$14,987

**FARMER GRANT: FNE18-903**

Twenty-first Century Pastured Poultry
Nichki Carangelo, Letterbox Farm, Hudson NY
$15,000

**FARMER GRANT: FNE18-906**

Developing a Device to Capture the Untapped Potential of Fly Larvae in Dairy Cow Manure Pits as Ingredients for Fish Feeds
Jeremy Sherman, Jerry Dell Farm, Dryden NY
$14,984
“This project was able to connect farming to wildlife conservation in a mutual benefit...with the Northeast being the first region to see dramatic losses in bat populations due to White-nose syndrome, it was refreshing to know the farmers of the region are eager to support the current population of bats.”

_Kate Harms_
Rodale Institute
Partnership Grant Recipient:
“Investigating bat activity in various agricultural landscapes to develop organic insect pest management” (ONE16-260)
GRADUATE STUDENT GRANT: GNE18-188
Wild Bees in the Trees: Pollen Analyses to Determine Wild Bee Foraging in Early Spring Canopies
Katherine Urban-Mead, Cornell University, Ithaca NY
Advisor: Bryan Danforth
$14,912

GRADUATE STUDENT GRANT: GNE18-191
Low Tunnel Strawberries: Survey of Pest Incidence and Recommendations for Biological Control of Two-Spotted Spider Mite
Samantha Wilden, Cornell University, Geneva NY
Advisor: Gregory English-Loeb
$14,988

PARTNERSHIP GRANT: ONE18-321
Sheep-to-Shawl: Creating a Solution-Based Strategy that Addresses the Fragmented Fiber Production Infrastructure
Monika Roth, Cornell University Cooperative Extension, Ithaca NY
$15,000

STATE PROGRAM: NENY17-001
Baskets to Pallets II: Establishing a NYS Leadership Team of Wholesale Marketing Specialists
Violet Stone, Cornell University, Ithaca NY
$49,613

GRADUATE STUDENT GRANT: GNE18-164
Assessing the Impact of Organic Farming Practices on Building Drought Resistant Soil
Abdelrahman Alfahham, University of Pennsylvania, Philadelphia PA
Advisor: Alain Plante
$14,346

PARTNERSHIP GRANT: ONE18-150
Reversing a Downward Trend in Customer Participation and Farmer Sales at Farmers’ Markets
Diane Eggert, Farmers Market Federation of NY, Fayetteville NY
$145,242

PARTNERSHIP GRANT: ONE18-152
Farmland Advisors New Jersey: A Training Program for Professionals Working with Farmers to Access and Transfer Farmland
David Haight, American Farmland Trust, Saratoga Springs NY
$15,000

PROFESSIONAL DEVELOPMENT PROGRAM GRANT: ENE18-153
From Classroom to the Field: Advanced Soil Health Training for New York Agricultural Service Providers
Jeff Ten Eyck, American Farmland Trust, Saratoga Springs NY
$145,305

PROFESSIONAL DEVELOPMENT PROGRAM GRANT: ENE18-155
Evaluation of Pasture Dragging as Non-Chemical Control Method for Filth Fly Pests of Pastured Beef Cattle
Matt Steiman, Dickinson College, Carlisle PA
$14,059

PA Queen Project and the HHBBC Field Test Mite-Biting Behavior using Backyard Scientists
Jeffrey Berta, Always Summer Herbs, Slippery Rock PA
$15,000

Farmland Advisors New Jersey: A Training Program for Professionals Working with Farmers to Access and Transfer Farmland
David Haight, American Farmland Trust, Saratoga Springs NY
$74,133

FARMER GRANT: FNE18-896
Aggregation and Cooperative Marketing Opportunities for Enhancing Chestnut Production and Conservation
Erik Hagan, Windswept Agroforestry Farm, State College PA
$13,180

FARMER GRANT: FNE18-886
How Does 40 Years of No-till Affect Soil Microbial Nitrogen Dynamics
Mara Cloutier, Pennsylvania State University, University Park PA
Advisor: Mary Ann Bruns
$14,964

Pennsylvania

FARMER GRANT: FNE18-911
Native Perennial Grasses in Multifunctional Riparian Buffers for Improving Water Quality and Farm Profitability
Stephanie Herbstritt, Pennsylvania State University, University Park PA
Advisor: Thomas Richard
$14,991
INNOVATIONS

GRADUATE STUDENT GRANT: GNE18-174

Sexuality and Sustainable Agriculture: Examining Queer Farmers’ Quality of Life in Pennsylvania
Michaela Hoffelmeyer, Pennsylvania State University, University Park PA
Advisor: Kathleen Sexsmith
$14,997

GRADUATE STUDENT GRANT: GNE18-176

Ultrasensitive and On-field Detection of a Plant Virus by a Nanotube-filtering Device and Isothermal Amplification
Juan Francisco Iturralde Martinez, Pennsylvania State University, University Park PA
Advisor: Cristina Rosa
$14,937

GRADUATE STUDENT GRANT: GNE18-178

Combining Infection Sources, Periods, and Persistence into the Integrated Management of Bitter Rot on Apples
Phillip Martin, Pennsylvania State University, University Park PA
Advisor: Kari Peter
$14,992

GRADUATE STUDENT GRANT: GNE18-180

Symbiotic Nitrogen Fixation in Non-legumes: N-supply, Yield and Quality Effects in Tomato and Pepper
Ryan Sebring, Pennsylvania State University, University Park PA
Advisor: Sjoerd Duiker
$14,850

PARTNERSHIP GRANT: ONE18-309

Establishing a Service Provider Network for Alternative Grain Crops in Pennsylvania
Kristy Borrelli, Pennsylvania State University, University Park PA
$44,408

PARTNERSHIP GRANT: ONE18-319

Effects of Unimproved Equine Manure Stacking on Soil and Groundwater Nutrients at Sites with Seasonally High Water
Rachel Onuska, Bucks County Conservation District, Doylestown PA
$14,795

PARTNERSHIP GRANT: ONE18-320

Developing Markets for Warm Season Grass within the Pennsylvania Farm Community
Michael Palko, Penn Soil RC&D Council, Mifflinburg PA
$14,993

STATE PROGRAM: NEPA17-001

Establishing a Service Provider Network for Alternative Grain Crops in Pennsylvania
Kristy Borrelli, Pennsylvania State University, University Park PA
$44,408

STATE PROGRAM: NERI17-001

Season Extension with Caterpillar Tunnels on Rhode Island Farms
Heather Faubert, University of Rhode Island, Kingston RI
$20,500

Rhode Island

Vermont

FARMER GRANT: FNE18-895

Seakale: Commercial Opportunities for New Perennial Crops and Climate Smart Agriculture
Aaron Guman, Walking Onion LLC, Middlesex VT
$14,968

FARMER GRANT: FNE18-906

Swede Midge Control for Cruciferous Crops
Jaiel Pulskamp, Kettle Song Farm, Worcester VT
$8,735

FARMER GRANT: FNE18-909

Nutritional Contribution of Forage on Pasture-Raised Pigs
Alessandra Rellini, Agricola Farm, Panton VT
$3,163
GRADUATE STUDENT GRANT: GNE18-170
Agricultural Best Management Practices to Mitigate Gaseous Carbon and Nitrogen Losses from a Zea Mays Silage System
Kyle Dittmer, University of Vermont, Burlington VT
Advisor: Carol Adair
$15,000

GRADUATE STUDENT GRANT: GNE18-179
Improving the Rotational Value of Field Pea as a Legume Cover Crop
Edward Marques, University of Vermont, Burlington VT
Advisor: Eric Bishop von Wettberg
$15,000

PARTNERSHIP GRANT: ONE18-323
Vermont Maple in Every School Project
Abbie Nelson, Northeast Organic Farming Association of Vermont, Richmond VT
$14,998

PROFESSIONAL DEVELOPMENT PROGRAM GRANT: ENE18-149
Developing Technical Skills of Service Providers in the Northeast to Assist Farmers with Transition to No-Till
Heather Darby, University of Vermont Extension, St. Albans VT
$171,222

STATE PROGRAM: NEVT17-001
Enhancing Evaluation Capacity to Improve Sustainable Agriculture Programs and Outcomes in VT
Beth Holtzman, University of Vermont Extension, Barre VT
$46,111

WEST VIRGINIA

FARMER GRANT: FNE18-907
Here Comes the Sun: Solar Power as Energy Source in Remote High Tunnel Ventilation Systems
Tommye Rafes, T. L. Fruits and Vegetables LLC, Caldwell WV
$14,246

STATE PROGRAM: NEWVU17-001
Enhancing the Viability and Profitability of Direct Sales and Agritourism Agripreneurs through Education, Clustering and Networking Opportunities
Doolaire Singh-Knights, West Virginia University, Morgantown WV
$44,420

STATE PROGRAM: NEWVSU17-001
Growing Grant Writing and Management Capacity with WV Ag Service Providers to Support Our Ag Community
Barbara Liedl, West Virginia State University, Institute WV
$16,664

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